

**Title:** Biodiesel Cetane Number Engine Testing Comparison to Calculated Cetane Index Number

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**Summary:**

Biodiesel, like any other diesel fuel, must have good ignition quality. Ignition quality in diesel fuel is measured by the "cetane number." The cetane number measures how easily ignition occurs and the smoothness of combustion. In a compression ignition diesel engine this cetane number is the measure of ignition promotion. In a spark ignited gasoline engine the ignition quality of gasoline is measured by an octane number which is a rating of ignition delay.

Good ignition from high cetane assists in easy starting, starting at low temperature, low ignition pressures, and smooth operation with lower knocking characteristics. Low cetane fuel with poor ignition qualities causes misfiring, camish on pistons, engine deposits, rough operation and higher knocking. The cetane number requirement for an engine depends on the engine design, size, operational speed, load condition and atmospheric conditions.

A typical cetane number range for #2 diesel fuel is 40-45 while #1 diesel is 48-52. Biodiesel from vegetable oils have been recorded as having a cetane number range of 46 to 52, and animal fat based biodiesels cetane numbers range from 56 to 60.

**Market Segment:** General Interest

**Accessibility:** Electronic file not available at this time.